

During June I was searching some aspen trees for other larvæ. I noticed some lumps, or knobs, near end of twigs with suspicious holes and frass at exit. I opened two and found undoubted Sesiid larvæ between quarter and half an inch long. They were not larvæ of any Sesiid that I am acquainted with. Could they have been *S. tabaniformis*? They both died. I left other swellings, and if I am able to do so will again search next May or June. The twigs were not thicker above and below the swellings than an ordinary lead pencil; it is therefore unlikely to have been young *T. apiformis*, nor is *T. apiformis*, to my knowledge, found here.

68, Dry Hill Park Road, Tonbridge, Kent.

NEW SPECIES OF HETEROCERA FROM FORMOSA.

By A. E. WILEMAN, F.E.S.

NOCTUIDÆ.

Nyctipao albicincta obscura, ab. nov.

♂. Differs from the typical form in having dark brown fringes to all wings on both surfaces; the transverse lines on upper side are suffused with dark brown, especially those of fore wings.

Expanse, 116 millim.

Collection number, 1828.

A male specimen from Horisha, May, 1908.

Except in the characters referred to this specimen does not differ from *Nyctipao albicincta*, Kollar (Hügel's Kaschmir, iv., p. 474, pl. 22).

Bleptina bisectalis, sp. n.

♂. Head brown; thorax blackish, mixed with grey, front brown; abdomen brownish grey, blackish tinged on posterior edge of each segment. Fore wings blackish, streaked and powdered with brown on costal area up to postmedial line; median nervure, and branches up to postmedial line, white; antemedial and postmedial lines white, inwardly oblique, the postmedial slightly indented before the dorsum; discoidal lunule white; subterminal line pale, wavy; fringes blackish, marked with white, preceded by black triangular marks between the veins. Hind wings dark grey, paler on costal area; two pale slightly curved lines beyond the middle, the outer one serrate; black triangular marks on termen; fringes dark grey. Under side of fore wings whitish strongly suffused with fuscous, costal area tinged with ochreous brown; discoidal mark and serrate postmedial line blackish, subterminal line pale ochreous but only distinct towards costa: hind wings whitish speckled and clouded with brown, discoidal lunule black preceded by a black spot in the cell; two blackish serrate lines beyond the middle, each line outwardly edged with whitish.

Expanse, 40 millim.

Collection number, 1497.

d
1g
ain

A male specimen from Arizan (7300 ft.), August 15th, 1905. There is a male, also from Arizan (Wileman), in the British Museum.

Allied to *B. ambigua*, Leech.

Bleptina centralis, sp. n.

♂. Head and thorax brown, grey mixed; abdomen whitish brown, darker on the posterior edges of segments. Fore wings brown with faint purplish tinge on the basal and terminal areas, medial area whitish sprinkled and clouded with brown; antemedial line black, slender, inwardly edged with white, almost straight; post-medial line black, outwardly edged with white, bluntly angled opposite the black discoidal lunule; subterminal line paler, wavy; terminal lunules black, fringes whitish brown marked with darker. Hind wings pale fuscous with traces of whitish transverse bands on the dorsal area. Under side whitish: fore wings suffused with fuscous brown; postmedial line black, excurved beyond the cell; discoidal dot black; subterminal line pale ochreous, only distinct on the costa where it is inwardly clouded with blackish: hind wings sprinkled with brown, chiefly on the costal area; discoidal lunule black, preceded by a black dot in the cell; postmedial line blackish, wavy, followed by a blackish interrupted band.

Expanse, 30 millim.

Collection number, 527.

One male specimen from Kaushirei, April 15th, 1908.

Near *B. descripta* Leech.

Bleptina persimilis, sp. n.

♂. Head and thorax brown, abdomen grey brown; antennæ fasciculate. Fore wings ochreous brown, basal area purplish brown; antemedial line purplish brown, nearly straight; medial line purplish brown, sinuous, outwardly shaded with brown; postmedial line (double) and subterminal line purplish brown, sinuous, the area between these lines shaded with brown; costal area between apex and subterminal line purplish brown; a black dot in the cell, two black dots at end of the cell with a third just beyond the lower, and a black spot in the first sinus of the postmedial line; terminal dots black. Hind wings pale fuscous brown, suffused with darker, a dusky discoidal mark and transverse line beyond; subterminal line whitish, broad and well-defined towards dorsum, faint towards costa. Fringes of all wings pale brown, marked with darker. Under side of fore wings pale brown suffused with darker; discoidal dot and line beyond darker: of hind wings pale brown sprinkled with darker; discoidal spot and curved line beyond blackish; subterminal line pale bordered with dusky.

Expanse, 34 millim.

Collection number, 1745.

not Allied to *B. mimica*, Hampson.

exte. A male specimen from Rantaizan, May 8th, 1909.

There is an example of each sex from Formosa (Wileman) in the British Museum.

Bleptina incisa, sp. n.

♂. Head and thorax grey mixed with brown, abdomen pale brown inclining to whitish. Fore wings creamy white, clouded with brown on middle of discal area; basal and terminal area black, the terminal deeply invaded by the ground colour about middle; discoidal mark black, lunular, some brown scales around it; terminal dots black, fringes pale grey darker towards apex of the wing. Hind wings fuscous grey with two paler bands. Under side whitish flecked with brown; fore wing with darker terminal area and black discoidal mark; hind wing with black discoidal lunule and black dot in the cell, ternal area barred with black.

♀. Similar but costal portion of black terminal area of the fore wings broader.

Expanse, 36 millim. ♂; 38 millim. ♀.

Collection number, 1466.

One example of each sex from Arizan (7300 ft.), August, 1908.

Near *B. figurata*, Hampson.

Bleptina contigua, sp. n.

♀. Head and thorax white, brown tinged; abdomen whitish brown. Fore wings white, faintly striated with brown, basal fourth freckled with brown except on dorsum; postmedial line dark brown, subterminal line whitish, space between these lines densely, and beyond the subterminal sparsely, powdered with brown; black marks on termen, fringes grey marked with darker. Hind wings white, dusky on basal half; postmedial band dusky, terminal line black, fringes grey. Under side of fore wings fuscous brown, mottled with darker; hind wings whitish sprinkled with brown chiefly on costal area, a black discoidal dot and two dusky transverse lines beyond.

Expanse, 28 millim.

Collection number, 1466 A.

A female specimen from Rantaizan, May 4th, 1909.

Allied to *B. propugnata*, Leech.

Bleptina bidentata, sp. n.

♂. Antennæ ciliate with paired bristles at each joint. Fore wings blackish on basal and terminal areas, whitish clouded with black-brown on medial area; antemedial line black, interrupted, outwardly edged with whitish, turned inwards towards dorsum; post-medial line black, wavy, bidentate about middle, incurved below middle, inwardly edged with white; discoidal lunule black; sub-terminal line pale, sinuous; terminal dots black, fringes whitish marked with blackish. Hind wings light fuscous; discoidal spot blackish, two dark transverse bands beyond, both outwardly edged with whitish. Under side of fore wings dark fuscous, a quadrate pale patch at apex: of hind wings whitish flecked with fuscous;

antemedial and postmedial lines blackish, wavy, a blackish band beyond the postmedial line; discoidal spot black, set on the antemedial line, a black dot in the cell.

Expanse, 34 millim.

Collection number, 527 A.

* One example of each sex from Arizan (7300 ft.) August, 1908. Near *B. propugnata*, Leech.

Bleptina terminalis, sp. n.

♀. Fore wings dull purplish brown at the base and area beyond the postmedial line; medial area pale ochreous brown, traversed by a dark brown shade; antemedial line brown inwardly edged with whitish, oblique, limiting the basal area; postmedial line whitish edged with dark brown, turned inwards below the cell to vein 2, thence oblique to dorsum; subterminal line dark brown, sinuous, marked with white on the costa; space between the postmedial and subterminal lines dull purplish brown, and beyond the subterminal lines rather paler brown; discoidal lunule black, the extremities only distinct. Hind wings fuscous brown, medial and postmedial lines dusky, whitish edged. Under side fuscous brown, paler on hind wings, in the cell and at apex of fore wings; the hind wings have a black discoidal mark, and blackish medial and postmedial lines, the postmedial is outwardly edged with whitish towards dorsum.

Expanse, 34 millim.

Collection number, 1008.

A female specimen from Arizan (7500 ft.), September, 1906. Allied to *B. curvilinea*, Leech.

Bleptina quadripuncta, sp. n.

Head, thorax and abdomen brown-grey, dappled with darker brown. Fore wings greyish, sprinkled and clouded with brown; antemedial line whitish, straight, outwardly bordered with dark brown; postmedial line whitish narrowly edged with dark brown, almost parallel with the antemedial; a black spot divided by a whitish X-like mark; the basal portion of the costa suffused with dark brown, two dark brown clouds on terminal area, dots on termen black. Hind wings pale fuscous, postmedial line whitish, terminal dots black. Under side pale brown sprinkled with darker, all wings have a black discoidal spot and a pale postmedial line, area beyond the postmedial darker except on the termen.

Expanse, 38 millim.

Collection number, 1484.

One example of each sex from Kanshirei, June 4th, 1908. Near *B. parallela*, Leech.

LASIOCAMPIDÆ.

Metanastria brunnea, sp. n.

♂. Head brown with greyish hairs; palpi dark brown, antennæ paler brown; thorax dark brown, collar darker; abdomen brown,

tail blackish. Fore wings brown, inclining to reddish, brown hair on the basal half; postmedial line double, blackish, wavy; subterminal line composed of eight greyish white spots, the 5th and 8th set further in than others of the series, all edged with dark grey, the 7th and 8th centred with dark grey. Hind wings paler brown faintly tinged with reddish on basal area; traces of a blackish medial band. Under side pale brown clouded and suffused with darker; all the wings traversed by a dusky band.

Expanse, 68 millim.

Collection number, 1829.

A male specimen from Rantaizan (7500 ft.), February 20th, 1909.

Allied to *M. purpurascens*, Moore.

Gastropacha taiwana, sp. n.

♂. Head, thorax and abdomen brown. Fore wings brown with a faint greyish tinge, darker on basal area; discoidal spot black, and traces of a diffuse dusky subterminal line. Hind wings dark brown, paler on dorsal area; fringes brown, tips whitish between veins. Under side of fore wings reddish brown, paler towards termen: of hind wings brown, clothed with whitish hairs thickly covering the dorsal area.

Expanse, 56 millim.

Allied to *G. khasiana*, Swinhoe.

The type, a male specimen from Rantaizan (Wileman), is in the British Museum.

GEOMETRIDÆ.

Pseudomiza aurata, sp. n.

♂. Head, thorax and abdomen yellow. Fore wings yellow, freckled with brownish; antemedial line brownish, curved and indented; costa from base to antemedial line orange, suffused with brownish; postmedial line blackish, oblique from apex to dorsum just before middle, shaded with purplish brown; apical area purplish brown with greyish suffusion, enclosing four subhyaline spots, the third spot small and the fourth large; discoidal spot blackish. Hind wings yellow freckled with brownish; medial band brownish, not extending to costa. Under side as above, but the costa of forewings without orange colour towards base.

Expanse, 50 millim.

Collection number, 1823.

One male specimen from Rantaizan, May, 1909.

Allied to *P. flavescens*, Swinhoe.

Pseudomiza aurata limbata, ab. nov.

♂. Head and thorax yellow, orange mixed, abdomen yellow. Fore wings yellow, slightly freckled with brownish; basal and terminal areas orange freckled and clouded with brownish, the outer limit of the basal area irregular and edged with brown at costa, the inner

limit of terminal area oblique to apex where are four subhyaline spots set on the outer edge of a grey suffused purplish brown patch; discoidal dot blackish. Hind wings yellow freckled with brownish; medial band brownish outwardly edged with orange, not extending to costa. Under side yellow with traces of the brownish markings of upper side, the subhyaline marks of fore wings rather larger.

Expanse 50 millim.

Collection number, 1823A.

One male specimen from Arizan, May, 1908.

Loxotephria taiwana, sp. n.

♀. Head and thorax brown, the latter yellowish mixed; abdomen brown, darker at base, paler below. Fore wings yellowish, finely dusted with purplish brown; antemedial and postmedial lines purplish brown, inwardly oblique, both apparently angled below costa, but costal extremity of the antemedial not distinct; angle of postmedial brown shaded; subterminal line pale, angled below costa, outwardly shaded with brown; terminal line and fringes purplish brown, the latter paler at base. Hind wings yellowish, dusted with purplish brown; two purplish brown lines, the outer expanding on the costa; terminal line and fringes as on the fore wings. Under side yellowish, slightly freckled with purplish brown; on the fore wings the dorsum is whitish and the terminal area purplish brown except at apex; tranverse lines of upper side indicated on all wings.

Expanse 30 millim.

Collection number, 1255.

A female specimen from Kanshirei, May 2nd, 1908.

Allied to *L. padanga*, Swinhoe.

Leucoctenorrhoe undulata, sp. n.

♂. Fore wings white, costal and basal areas clouded with ochreous brown; subbasal line indicated by black marks on the veins; discoidal spot black; postmedial line black, slightly wavy, bent outwards below costa and inwards below vein 5, followed by ochreous brown and greyish clouds towards costa and by a black mark about middle; terminal dots black. Hind wings white; antemedial and postmedial lines dusky, only distinct on the dorsal area; subterminal line dusky, double; three black dots on termen. Under side white; postmedial line black, thicker than on the upper side, costal area beyond clouded with ochreous brown and streaked with blackish.

Expanse, 26 millim.

The type, which is in the British Museum, from Kanshirei, April 16th, 1908 (A. E. Wileman).

Docirava flavilinata, sp. n.

♂. Head and thorax grey; abdomen whitish brown, pinkish below. Fore wings pale grey slightly tinged with pink, powdered with

darker grey, costa edged with pink; antemedial line ochreous outwardly edged with purplish brown, not reaching the costa; post-medial line ochreous, inwardly edged with purplish brown, incurved towards dorsum; discoidal dot purplish brown, faintly yellow margined; fringes pinkish, especially towards tips. Hind wings whitish brown, basal half fuscous tinged. Under side grey, suffused with pink on hind wings and on the apical area and the costa of fore wings.

Expanse, 32 millim.

Collection number, 937.

One male specimen from Tozan (8500 ft.), September 14th, 1906.

Allied to *D. æquilineata*, Walk.

ARBELIDÆ.

Arbela discipuncta, sp. n.

♂. Head and thorax pale brown mixed with darker; abdomen brownish grey, large tuft dark brown. Fore wings whitish, slightly tinged with brownish on basal area; a blackish mark below median nervure towards base and a smaller black mark above; a brownish grey spot at outer end of the cell; dorsum marked with brownish grey, as also is the terminal area except on costa; subterminal line whitish, irregular; fringes of the ground-colour marked with brown. Hind wings fuscous, brown tinged towards the base; fringes whitish marked with brown. Under side somewhat as above.

Expanse, 37 millim.

Collection number, 1246.

One rather worn male specimen from Kanshirei, April 27th, 1908.

Comes near *A. phaga*, Swinhoe.

LIMACODIDÆ.

Narosa obscura, sp. n.

♀. Head and thorax brown mixed with grey, abdomen rather paler. Fore wings pale brown, densely powdered with dark brown; two blackish marks on the disc, one in the cell and one below the cell, the latter oblique; fringes dark brown. Hind wings and under side whitish brown, fuscous tinged.

Expanse, 22 millim.

Collection numbers, 1353 and 1272.

Two female specimens from Kanshirei; the one described taken on April 30th, 1908; the other on September 8th, 1907.

Fore wings of the September example are paler than those of the type described. It appears to be somewhat worn, probably due to the absence of dark brown powdering.

Allied to *N. holoxanthia*, Hampson.

Altha subrosea, sp. n.

♀. Head, thorax, and abdomen yellowish buff, transversly marked with reddish. Fore wings yellowish buff, costa suffused with white especially towards apex; two double whitish lines on the dorsal area, not continued across the wing; three pale edged reddish brown spots at base of the wings, one at outer end of the cell, and an oblique series of five beyond the cell; fringes of the ground-colour, preceded by pale edged reddish brown lunules. Hind wings red, costa yellowish. Under side yellowish buff, all wings suffused with red on the disc.

Expanse, 28 millim.

Collection number, 1261.

Two female specimens from Kanshirei, June 5th, 1907, and July 10th, 1908.

Thosca rufa, sp. n.

♂. Head, thorax, and abdomen reddish brown. Fore wings reddish brown; postmedial line oblique, whitish, inwardly edged with dark purplish brown, slightly broadened on dorsum; subterminal line dusky, outwardly oblique from costal end of postmedial line to the termen just above the tornus; apical part of terminal area, limited by the oblique subterminal line, slightly greyish tinged. Hind wings, and under side of all the wings, fuscous brown.

Expanse, 24-30 millim.

Collection number, 1260.

Two male specimens. One from Suisha, July 21st, 1909, the other from Kanshirei, April 10th, 1908.

DREPANIDÆ.

Macrocilix misticata flavotincta, ab. nov.

♀. Head white, thorax orange brown, collar and patagia yellow. Fore wings, upper part of band somewhat narrower than in typical *misticata*, and its dorsal extremity is orange brown shaded on each side with yellow. On the hind wings the tornal area is suffused with grey, obliterating the typical black marking.

Expanse, 48 millim.

Collection number, 1831.

A female specimen from Arizan, August, 1908.

NOTES AND OBSERVATIONS.

FORMALDEHYDE USEFUL IN SETTING INSECTS.—I am interested to see Mr. St. John's notes on the use of formaldehyde in setting insects (Entom. xlvii. p. 325), as I have occasionally used it myself for some years past, being led to try it by the extreme rigidity of insects killed by its fumes. My method was to remove an insect from the setting board after 'initial set' had occurred, and lightly to touch the bases of the wings, where they join the body, with a camel-hair brush dipped in a 10 per cent. solution of formaldehyde, when the